

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A microphone apparatus, comprising:

a condenser microphone portion having a pair of diaphragm electrodes;
and

a contact portion having an acoustic impedance matching an acoustic
impedance of soft tissues in a body of a speaker, the contact
portion being affixed to the condenser microphone portion with no
intervening air space and conducting input speech vibrations from a
skin surface of the speaker to the condenser microphone portion,

wherein the apparatus is to be installed adapted for installation on a
surface of a portion of the skin surface on the behind an auricle,
over a sternocleidomastoid muscle immediately, and below [[the]] a
mastoid of [[the]] a skull, that is, in the lower part of the skin behind
the auricle,

wherein the microphone samples, as the input speech vibrations, at least
one of;

a non-audible murmur comprising vibration sounds that are
articulated by a variation in resonance filter
characteristics associated with motion of [[the]] a
phonatory organ, the non-audible murmur that is not
involving a regular vibration of [[the]] vocal cords, the
non-audible murmur being a vibration sound sounds
being generated when an externally non-audible a
respiratory sound that is not understandable by

persons other than the speaker is transmitted through internal soft tissues[[],];

a whisper comprising ~~which is audible~~ vibration sounds that are generated ~~but is uttered without~~ regularly vibrating the vocal cords[[],]; or

~~a sound uttered by~~ audible vibration sounds that are generated by regularly vibrating the vocal cords₁ and including one or more of a [[low]] voice ~~and a~~ having a volume below that which is understandable by persons other than the speaker, an audible murmur, and ~~input speech such as a teeth gnashing sound₁ and a tongue clucking sound, the microphone comprising a condenser microphone portion having a pair of diaphragm electrodes and a contact portion which has an acoustic impedance close to the acoustic impedance of soft tissues in the body, and conducts said input speech from said skin surface to said condenser microphone.~~

2. (Original) The microphone according to claim 1, wherein said contact portion is formed of hardened silicone rubber.
3. (Original) The microphone according to claim 2, wherein said hardened silicone rubber not only covers said condenser microphone portion but also fills the whole inside of the microphone.
4. (Original) The microphone according to claim 2 or claim 3, wherein the hardness of said hardened silicone rubber is not higher than 30 (Shore A).

5. (Original) The microphone according to claim 2 or claim 3, wherein said hardened silicone rubber is addition reaction-setting organo-polysiloxane, silica fine powder is 10 to 60 weight parts, and organo-hydrogen polysiloxane is 1 to 60 weight parts.
6. (Currently Amended) The microphone according to ~~any of claim 1 through claim 5~~, wherein the shape of said contact portion is such that the sectional area thereof becomes gradually smaller from said condenser microphone portion toward said skin surface.
7. (Currently Amended) The microphone according to ~~any of claim 1 through claim 5~~, wherein the shape of said contact portion is such that the sectional area thereof becomes gradually larger from said condenser microphone portion toward said skin surface.
8. (Currently Amended) The microphone according to ~~any of claim 1 through claim 7~~, wherein said condenser microphone portion is disposed submerged in said contact portion.
9. (Original) The microphone according to claim 8, further comprising a reinforcing portion which is harder than said contact portion and covers other parts than the face of the contact portion coming into contact with said skin surface, and a reflector which is disposed on the interface between said contact portion and said reinforcing portion and reflects said non-audible murmurs.
10. (Original) The microphone according to claim 9, wherein said condenser microphone portion is turned upside down.

11. (Original) The microphone according to claim 10, wherein said reflector has a parabolic shape, namely a shape following a parabola.
12. (Currently Amended) The microphone according to ~~any of claim 1 through claim 11~~, wherein it is configured integrally with a head wearing object to be fitted to the head of a human, such as spectacles, headphones, an earphone, a cap or a helmet.
13. (Currently Amended) A signal processing device which ~~subjects to signal processing input signals from a~~ processes an input signal sampled by the microphone according to claim 1 ~~be installed on a surface of the skin on the sternocleidomastoid muscle immediately below the mastoid of the skull, that is, in the lower part of the skin behind the auricle, intended to sample at least one of a non-audible murmur articulated by a variation in resonance filter characteristics associated with motion of the phonatory organ, the non-audible murmur not involving regular vibration of the vocal cords, the non-audible murmur being a vibration sound generated when an externally non-audible respiratory sound is transmitted through internal soft tissues, a whisper which is audible but is uttered without regularly vibrating the vocal cords, a sound uttered by regularly vibrating the vocal cords and including a low voice and a murmur, and input speech such as a teeth gnashing sound and a tongue clucking sound, the microphone comprising a condenser microphone portion having a pair of diaphragm electrodes and a contact portion which has an acoustic impedance close to the acoustic impedance of soft tissues in the body, and conducts said input speech from said skin surface to said condenser microphone.~~

14. (Currently Amended) A communication interface system ~~wherein it~~ which uses for communication the ~~result of input signal processing~~ processed by the signal processing device according to claim 13.
15. (Currently Amended) A sound sampling method by ~~which~~ use of a microphone that comprises a condenser microphone portion having a pair of diaphragm electrodes, and a contact portion having an acoustic impedance matching an acoustic impedance of soft tissues in a body of a speaker, the contact portion being affixed to the condenser microphone portion with no intervening air space and conducting input speech vibrations from a skin surface of the speaker to the condenser microphone portion, the sound sampling method comprising:
installing the microphone on a portion of the skin surface behind an auricle, over a sternocleidomastoid muscle, and below a mastoid of a skull;
samples sampling, as the input speech vibrations, at least one of:
a non-audible murmur comprising vibration sounds that are articulated by a variation in resonance filter characteristics associated with motion of [[the]] a phonatory organ, the non-audible murmur that is not involving a regular vibration of [[the]] vocal cords, the non-audible murmur being a vibration sound sounds being generated when an externally non-audible a respiratory sound that is not understandable by persons other than the speaker is transmitted through internal soft tissues[.,.];
a whisper comprising which is audible vibrations sounds that are generated but is uttered without regularly vibrating the vocal cords[.,.]; or

audible vibration sounds generated by a sound uttered by
regularly vibrating the vocal cords, and including one
or more of a [[low]] voice and a having a volume
below that which is understandable by persons other
than the speaker, an audible murmur, ~~and input~~
~~speech such as a teeth gnashing sound, [[and]] or a~~
~~tongue clucking sound, comprising: said microphone~~
~~causes said input speech to be conducted from said~~
~~skin surface to a condenser microphone having a pair~~
~~of diaphragm electrodes and via a contact portion~~
~~whose acoustic impedance is matched to an acoustic~~
~~impedance close to the acoustic impedance of soft~~
~~tissues in the body, and is installed on a surface of~~
~~the skin on the sternocleidomastoid muscle~~
~~immediately below the mastoid of the skull, that is, in~~
~~the lower part of the skin behind the auricle.~~